RS900/RS901 COOLSTART SERIES VI
RS999 FM / TW1 2-WAY PAGING SYSTEM

REMOTE ENGINE STARTING SYSTEM
INSTALLATION INSTRUCTIONS

INTRODUCTION

Congratulations on your choice of a Crimestopper CoolStart™ remote engine starter! This installation Handbook covers the following models: RS900 VI Remote Start & Keyless Entry System, RS901 Upgrade/Expansion module (No remotes or antenna), and the 2-Way RS999FM/TW1 system with 2-Way FM paging technology.

This installation book is designed for the installer or individual with an existing understanding of automotive electrical systems, along with the ability to test and connect wires for proper operation. *To ease installation, we suggest that you READ THIS MANUAL before beginning your installation. This book is provided as a GENERAL GUIDELINE and the information contained herein may differ from your vehicle.*

DISCLAIMER:
Crimestopper Security Products, Inc. and its' vendors shall not be liable for any accident resulting from the use of this product. This system is designed to be professionally installed into a vehicle in which all systems and associated components are in perfect working condition.

TECHNICAL SUPPORT: (800) 998-6880
Monday - Friday 8:00am - 4:30pm Pacific Std. Time
Web Site: www.crimestopper.com
E-mail: tech-support@crimestopper.com

CRIMESTOPPER SECURITY PRODUCTS, INC.
1770 S. TAPO STREET, SIMI VALLEY, CA. 93063

REV A 06.2003

This device complies with FCC Rules part 15. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference that may be received, including interference that may cause undesired operation. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications to this equipment. Such modification could void the user's authority to use the equipment.

TABLE OF CONTENTS

Pre-Installation Considerations……2

Cautions & Warnings……3

Wiring……3-7

Wiring High-Current Connector……8-9

Power Door Lock Wiring..……10-11

Smart Tachless, Tach Reference, Tach Finder, & Timed Crank Modes……12-14

Diesel Glow Plug Delay..……15

Option Programming ……15-19

Transmitter / Transceiver Programming……20

2 Vehicle Operation.……21

Troubleshooting "Before You Call" Section……22

Jumper Pin, Antenna, & System Diagrams……23-25

PRE-INSTALLATION CONSIDERATIONS

BEFORE BEGINNING, check all vehicle manufacturer cautions and warnings regarding electrical service (AIR BAGS, ABS BRAKES, ENGINE / BODY COMPUTER AND BATTERY).

PLAN OUT YOUR INSTALLATION and determine most suitable locations for all components to be placed. These components include: the module itself, valet/program button, possible relays, and antenna/receiver (RS900/999FM only, RS901 model does not include antenna or remotes.) Allow enough wire to create a service loop with strain relief, should servicing be required. This will also allow easier access and mounting.

DAMAGE to the CoolStart unit resulting from incorrect installation or failure to follow guidelines stated in this book will not be covered under warranty and will be subject to repair or replacement charges.

USE A VOLT/OHM METER to test and locate all connections. Test Lights can damage a vehicle's computer systems.

ADDITIONAL PARTS, which are not included with this unit, may be needed for your particular vehicle. . These items may include extra relays or Anti-Theft System Bypass modules.

INSTALLATION CAUTIONS & WARNINGS

****FOR SAFETY REASONS, DO NOT INSTALL RS900/901/999FM in vehicles with MANUAL TRANSMISSIONS.**** If accidentally left in gear, a remote started vehicle could become a self-propelled threat to life and property.

DO NOT extend the RS900/901/999FM Remote start ignition harness length. Mount the module so that main harness reaches all ignition switch wiring. Extending these wires could result in poor or improper performance.

DO NOT route any wiring that may become entangled with brake, gas pedals, steering column or any other moving parts in the vehicle.

DO NOT exceed the rated output current of any circuit on the Remote start module. Failure to observe this warning will result in damage to the unit not covered under warranty.

DO NOT remote start the vehicle in a closed garage. Make sure that the garage door is open or there is adequate ventilation. Failure to observe this rule could result in injury or death from poisonous Carbon Monoxide fumes.

WIRING

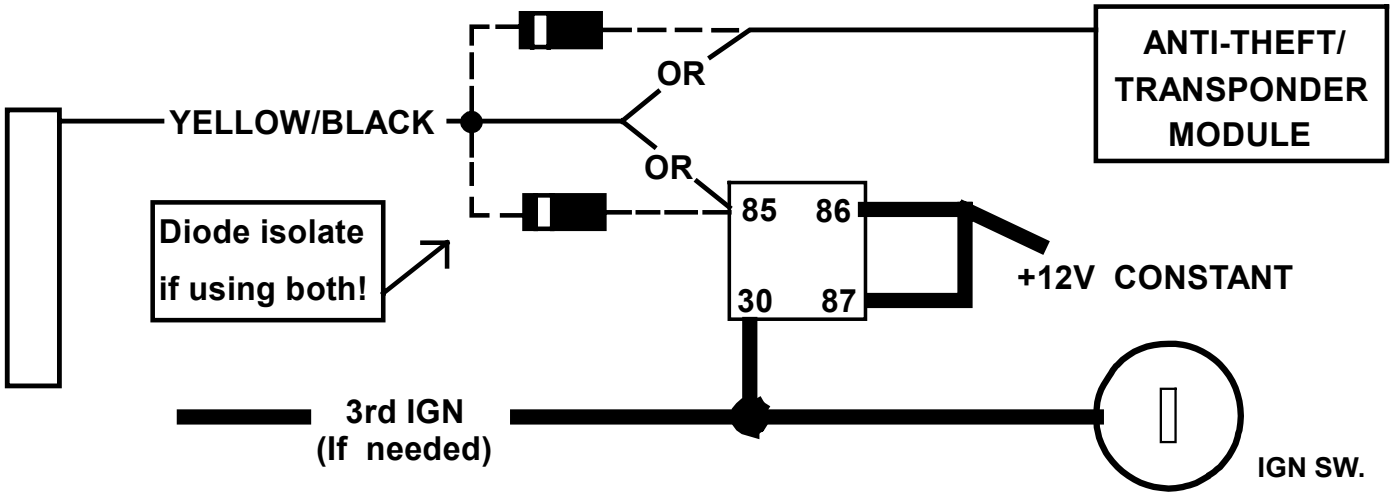
PIN 1: YELLOW/WHITE: (-) HORN CHIRP/HONK OUTPUT
Connect to the LOW CURRENT Negative Horn Trigger wire usually located near the steering column. If the vehicle horn circuit requires +12V, then a relay is required. RELAY WIRING: Connect the Yellow/White wire to terminal #85, connect relay terminals #86 and #87 to +12V constant power. Connect terminal #30 to the +12V positive Horn activation wire.

PIN 2: BLACK: MAIN SYSTEM GROUND
Connect to chassis metal of the vehicle. An existing bolt or screw may provide an adequate ground, or drill a small hole, scrape away paint and attach using a sheet metal screw & star washer. This wire must be connected to a proper ground or undesirable and inconsistent operation will occur. Do not use Factory ground locations.

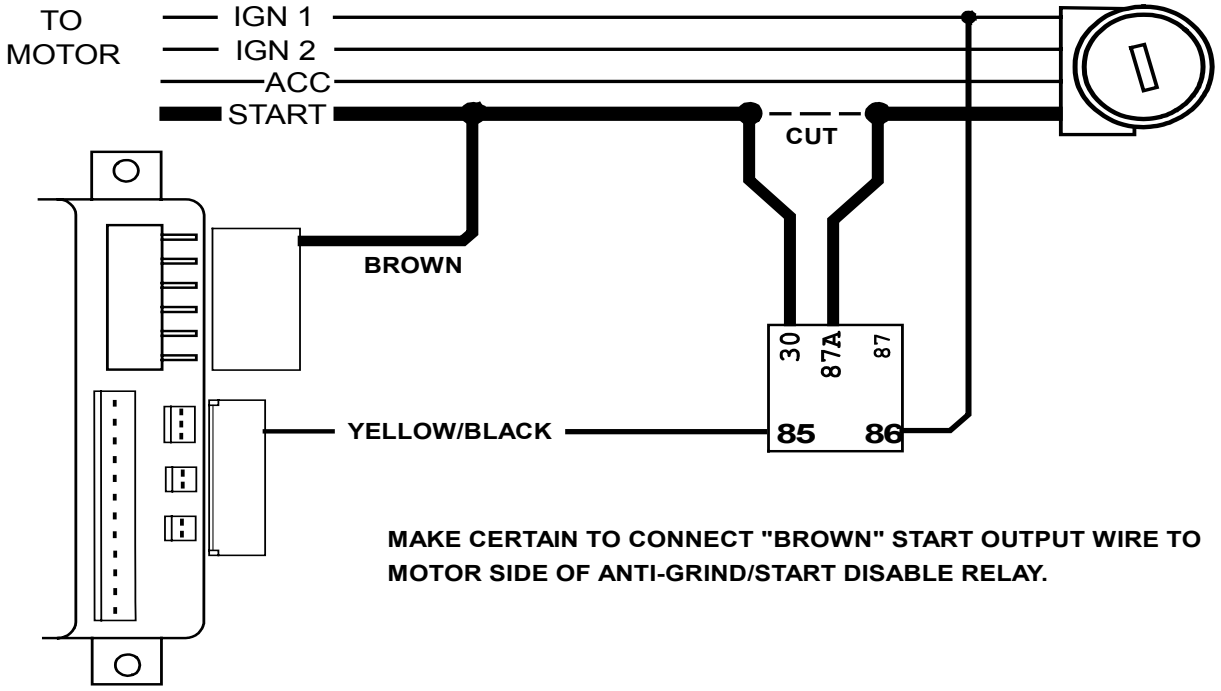
PIN 3: YELLOW/BLACK: (-) IGNITION OUTPUT -or- ANTI-GRIND/STARTER DISABLE OUTPUT
This negative output wire is programmable and can function two different ways. It can be used as a Negative Ignition output for GM Anti-theft and Transponder Bypass modules, or it can be programmed to function as an Anti grind/Starter Disable output. As a Negative Ignition wire, this wire turns on when the remote start button is pressed and stays on through the duration of the remote start. As an Anti grind/Starter disable this wire activates when the Lock button on the remote is pressed and during remote start. When using this wire for an Anti grind/Starter disable, an optional Relay is needed to interrupt the Starter circuit. The starter disable circuit adds an anti-theft feature to this remote start system and prevents accidental grinding of the starter if key is turned to far after a remote start. See diagrams on NEXT PAGE.

WIRING

PIN 3: YELLOW/BLACK FOR NEGATIVE IGNITION OUTPUT: (Relay and/or Module not included)



PIN 3: YELLOW/BLACK: FOR ANTI-GRIND/STARTER DISABLE OUTPUT: (Relay not included)



MAKE CERTAIN TO CONNECT "BROWN" START OUTPUT WIRE TO MOTOR SIDE OF ANTI-GRIND/START DISABLE RELAY.

PIN 4: BROWN: (-) AUX OUTPUT (TRUNK POP) or DOME LIGHT ILLUMINATION OUTPUT

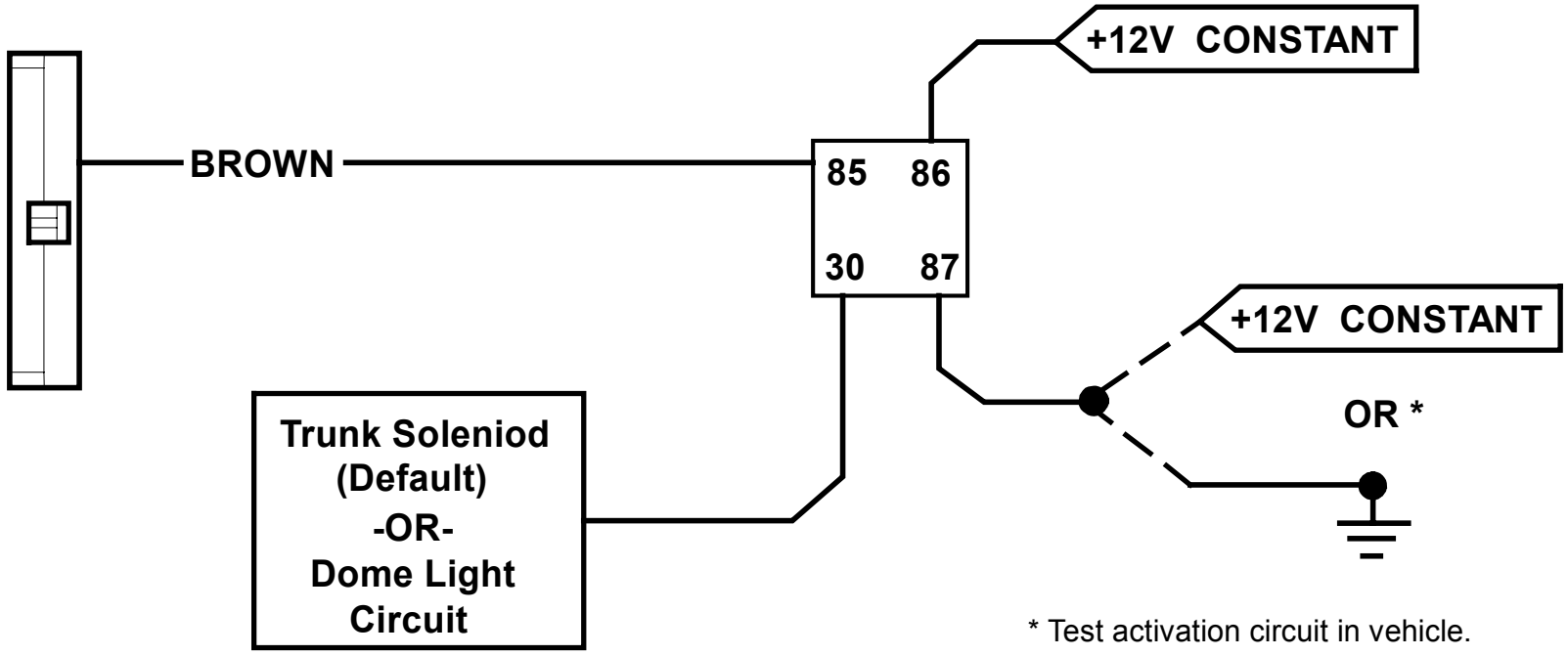
This output is programmable for two modes of operation. See Programming Option #9 Page 16.

Mode (1) DEFAULT: Provides a Ground pulse when button #3 (Trunk) on the remote transmitter is pushed to activate a factory electric trunk release or other optional accessory.

Mode (2) ALTERNATE: Provides a Ground output for 30 seconds when the unlock button is pressed for use as a dome light illumination output.

Note when using the Brown wire as a Trunk Pop, you may also need or want to program option #14 so the system also provides an Unlock signal when the trunk pop is activated. This may help to prevent unnecessary triggering of Factory Alarm systems or you may want the convenience of having the door unlock at the same.

BROWN WIRE: TRUNK OUTPUT or DOME LIGHT



* Test activation circuit in vehicle. Connect to+12V for Positive circuits or Ground for Negative circuits. Relay not included.

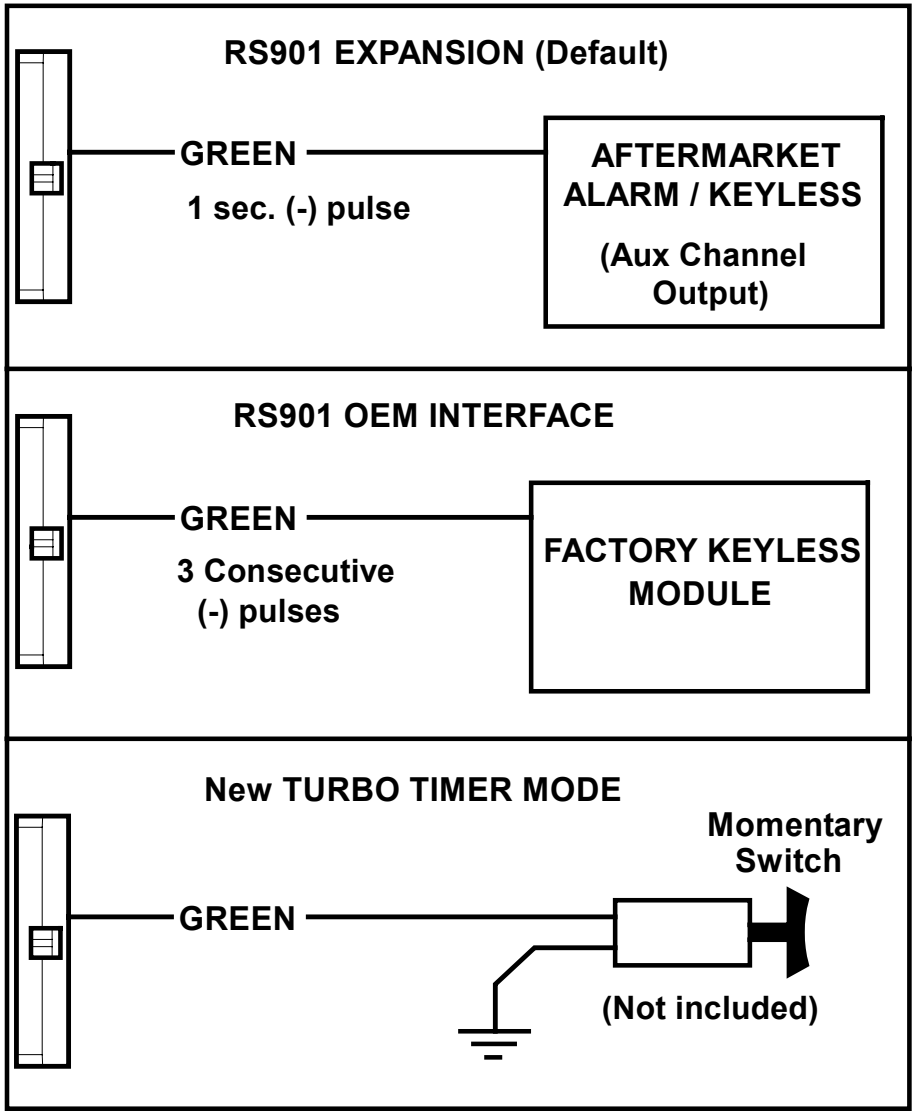
WIRING

PIN 5: GREEN: (-) START ACTIVATION INPUT, OEM INTERFACE or TURBO TIMER INPUT
See descriptions & diagrams below. See Programming Option #5 on page 16.

Mode (1) [Default (-) Neg. Start Activation] This wire allows a host (or parent) alarm's or keyless entry system to activate a Remote Start by sending a 1-Second Negative signal to the Green input wire to trigger a remote engine start or stop. Connect the Green wire to the host system's Auxiliary channel output wire.

Mode (2) [Alternate OEM Interface] This mode allows the system to Remote Start or Stop when 3 successive Negative pulses are sent to the Green input wire. Connect the Green input wire to the Negative lock signal wire of the factory system. If your Factory OEM system does not have this type of signal, then a relay is required.

TURBO TIMER INPUT [No programming required] This wire allows the system to keep a vehicle running for 1-5 minutes [selectively] after removing the key. This mode requires the use of a momentary switch that is not included with the kit. Connect a 2-pole momentary switch with one side to chassis Ground and the other side to the Green input wire. If you own a turbo or turbo diesel vehicle, you can now allow the CoolStart system to keep your engine running for 1-5 minutes after exiting/locking your vehicle to cool-down without the need for an external "Turbo Timer".



WIRING

PIN 6: GRAY: (-) NEGATIVE HOOD PIN SWITCH
Connect the Gray wire to a switch that is at ground when the hood is open. If an existing switch is not available, then we recommend one be installed. When this wire is grounded, the remote start is inhibited. If hood is opened on a remote started engine, the unit will immediately shut the motor off. The unit will not attempt to start if hood is open. The hood pin is also used for remote transmitter programming.

PIN 7: PINK: NEGATIVE or POSITIVE DIESEL GLOW PLUG or DOOR TRIGGER INPUT
Connect Pink wire to indicator circuit that shows a (- or +) Signal while the “WAIT TO START LAMP” is on. When this wire is used, the RS900/901/999FM system will wait until light turns off before attempting a remote start. Note: This input is jumper selectable for Positive or Negative type signals. See jumper pin diagram on page 23 for configuration.

PIN 8: PURPLE: (+12V) BRAKE RESET
Connect the Purple wire to the side of brake pedal switch that shows +12 volts ONLY when pedal is depressed. This is the wire that turns off the remote start once the driver’s key is in the Ignition and turned to the ON position.

PIN 9: ORANGE/BLACK: (-) OEM DISARM OUTPUT
This wire provides a Ground pulse to disarm the vehicles' Factory anti-theft system prior to a Remote Start. Connect this wire to the vehicles' anti-theft disarm wire. This wire is sometimes found coming off the Driver's door key switch or at the Factory Anti-theft control module. This wire may not be needed if Factory Security only requires a door unlock pulse.

PIN 10: ORANGE: (-) OEM REARM OUTPUT
This wire provides a ground pulse to rearm the vehicles' FACTORY anti-theft system after a timed-out or aborted remote start. Connect this wire to the vehicles' anti-theft rearm wire or to the door pin circuit depending on your requirements. This wire may be needed to pulse the door pin circuit on vehicles with retained accessory power.

PIN 12: RED/WHITE: TACHOMETER INPUT
When installing the RS900/901/999FM in Tach mode, this wire must be connected to a valid source of AC voltage. This wire allows the unit to sense the engine running and control the starter motor. See TACH REFERENCE MODE.

PROGRAM/OVERRIDE SWITCH: 2 PIN PLUG
This switch is used for programming features, transmitters, valet mode, and to override the optional starter disable (if installed) in the event of a non-operating remote control.

LED: 2 PIN PLUG (OPTIONAL)
The LED is used as a VALET/PROGRAMMING indicator and it will also FLASH for use as security deterrent when the optional ANTI-GRIND/STARTER DISABLE output is programmed.

WIRING: 7-PIN HIGH-CURRENT CONNECTOR

BROWN: +12V STARTER OUTPUT 30A:
Connect to circuit in the vehicle that has power ONLY while the STARTER MOTOR is CRANKING.

GRAY: +12V ACCESSORY OUTPUT 30A:
Connect to circuit in the vehicle that provides Accessory Power for systems such as HEAT and A/C. Typically, this wire turns ON with the first position of the key, DROPS OUT WHEN CRANKING, then returns as the engine starts and runs.

(2) RED: +12V POWER INPUT WIRES (30A Fused):
Connect to both of these leads to +12V Constant Power. We recommend the BATTERY POSTIVE TERMINAL.

PINK: +12V IGNITION OUTPUT 30A:
Connect to circuit in the vehicle that provides true Ignition Power for systems such as Spark and Fuel. Typically, this wire turns ON with the second position of the key, STAYS ON WHEN CRANKING, and continues ON as the vehicle runs.

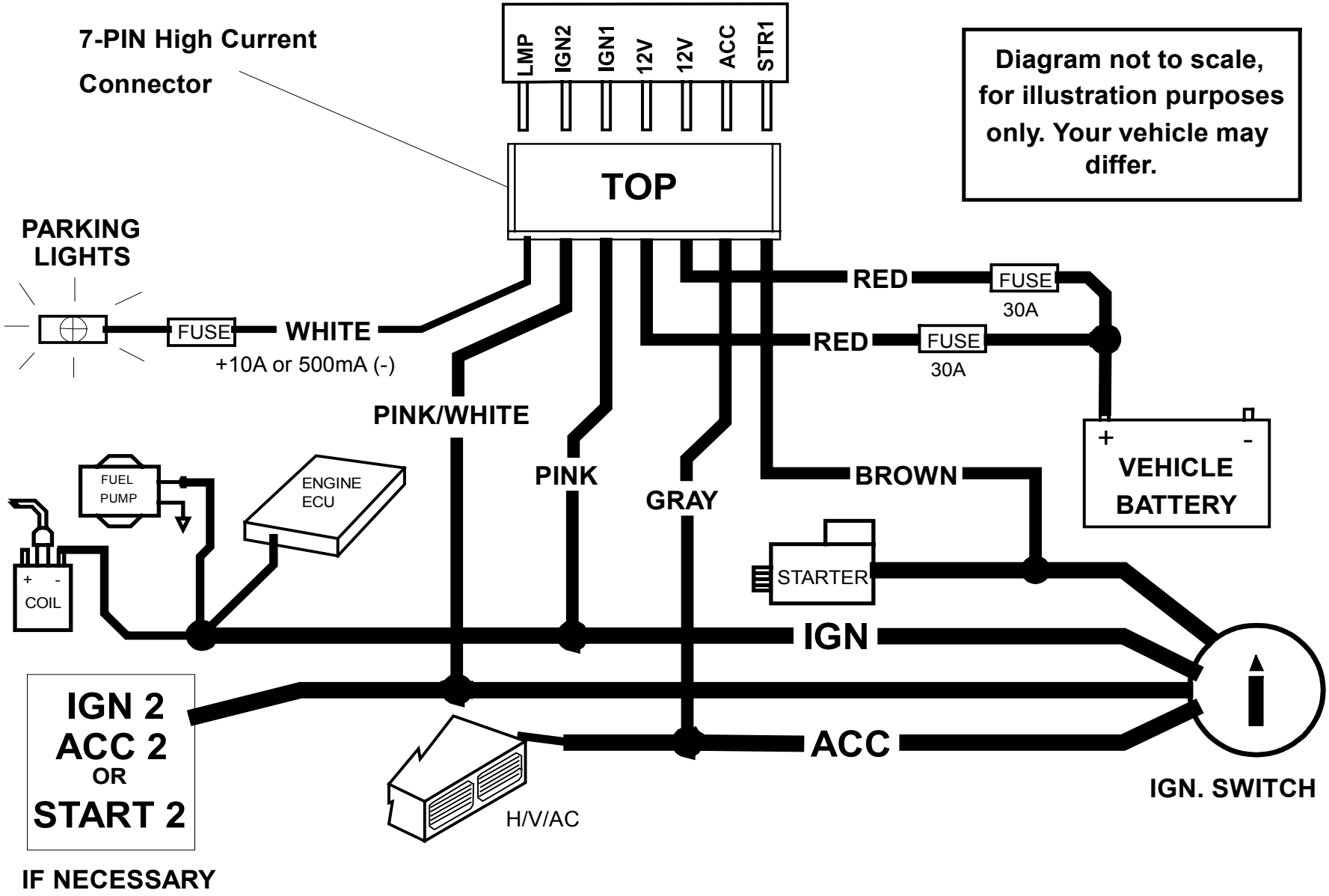
PINK/WHITE: +12V MULTI-FUNCTION OUTPUT 30A (JUMPER SELECTABLE):
This is an optional multi-function output wire the can be configured as a Second IGN, ACC or STARTER output. Some vehicles require more than just one IGN, ACC, or STARTER wire in order to start and run successfully. If this is the case for your particular vehicle, then use the jumper pin located under the access panel on the top of the CoolStart control module to configure this wire to suit your needs. The DEFAULT setting is IGNITION. See Jumper Pin Diagram.

WHITE: +12V or (-) NEGATIVE PARKING LIGHT OUTPUT:
Connect to vehicle parking light circuit at the back of light switch or if this is not possible, connect directly to one of the parking lights at the front of the vehicle. If your vehicle has a multiplex lighting system that requires a (-) Negative parking light output, then open the access door on the top of the module and move the jumper. See Jumper Pin section. Some European vehicles require separate left and right circuits. Use a dual relay or diodes to isolate the output. Note the current limit on the Negative parking light output. You may require an external relay to prevent damage to the unit.

(1) Default parking light output is +12 volts.
(2) Use an external relay for vehicles that draw excess current from extra running lights, light bars, or trailers. Parking light output is limited to +10 or -.5 AMPS only.

SEE DIAGRAM on NEXT PAGE

WIRING: 7-PIN HIGH-CURRENT CONNECTOR



NOTE: Heavy duty/High Current Ignition circuits greater than 30 AMPS. Industrial vehicles, dual AC, etc. require high-current relays. DO NOT use the outputs of the RS900 for High-Current systems or you will risk damaging the unit and creating a hazardous condition! Use Part #CS-403 relays for circuits up to 70 amps.

POWER DOOR LOCK WIRING CONNECTOR

PIN 1: BLUE: (-) Negative pulse for UNLOCK
PIN 2: RED: +12V When using external relays (TERM 86)
PIN 3: GREEN: (-) Negative pulse for LOCK

DETERMINING DOOR LOCK TYPE: We recommend determining the type of locking system the vehicle has before connecting any wires. Incorrect connection may result in damage to the alarm and/or vehicle locking system. Door lock information is provided as a guide. Your vehicle may differ.

Crimestopper Door Lock Accessories:
CS-6600DLM: Dual-relay plug-in module for Reverse Polarity, Positive, or Aftermarket Motors.
CS-6500DLI: Plug-in pulse inverter that converts the Negative outputs of the system to Positive type for Positive Door Lock systems.
CS-610S1: Aftermarket door lock actuator (motor).

Negative Trigger (-): Many Imports; Late model Ford & General Motors
Negative trigger door lock systems send a Negative (Ground) pulse to existing factory relays to lock and unlock the vehicle doors.

Positive Trigger (+): Many General Motors; Chrysler / Dodge / Plymouth
Positive trigger door lock systems send a Positive (+12V) pulse to existing factory relays to lock and unlock the vehicle doors.

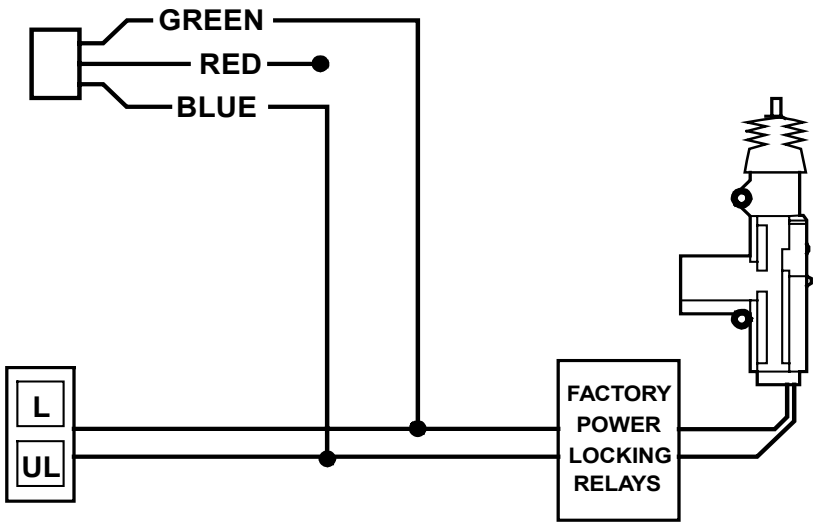
Reverse Polarity: Many Ford/Lincoln/Mercury/Dodge/Chrysler/Plymouth and early 90's GM Trucks
Reverse Polarity systems use no relays, but instead the door lock/unlock motors are controlled directly from the lock and unlock switches in the door. The lock and unlock wires rest at Negative Ground when not in use. When the lock or unlock button is pressed, one of the circuits is "Lifted" and replaced with +12V causing a lock or unlock to occur.

Single Wire (Dual Voltage): Late model Chrysler/Dodge/Plymouth Vehicles, some 2000-UP GM
Dual Voltage systems have lock/unlock switches that send varying levels of Positive voltage OR Negative ground current to the SAME wire for both lock and unlock. When the vehicle's Body Computer Module (BCM) or door lock module senses different voltages on this wire, the system will either lock or unlock. Single wire door lock systems require relays and resistors.

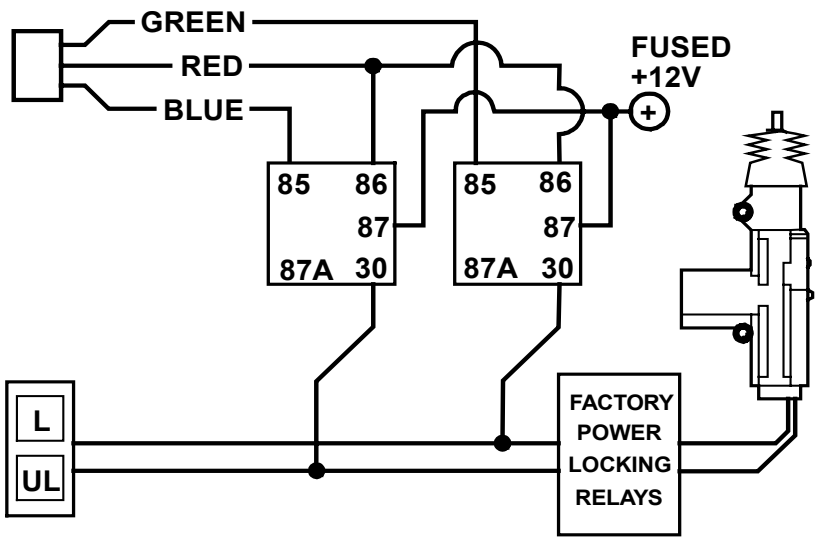
Databus Systems 2003 GM Trucks & SUV's, '99-04 Jeep Grand Cherokee
Databus systems send low current "Data messages" to the door lock controllers in order to lock and unlock the vehicle. To install aftermarket systems in these vehicles, an interface module is required that converts the regular lock/unlock pulses into "Data messages" to allow locking & unlocking. Interface modules are sold separately.

BASIC DOOR LOCK DIAGRAMS

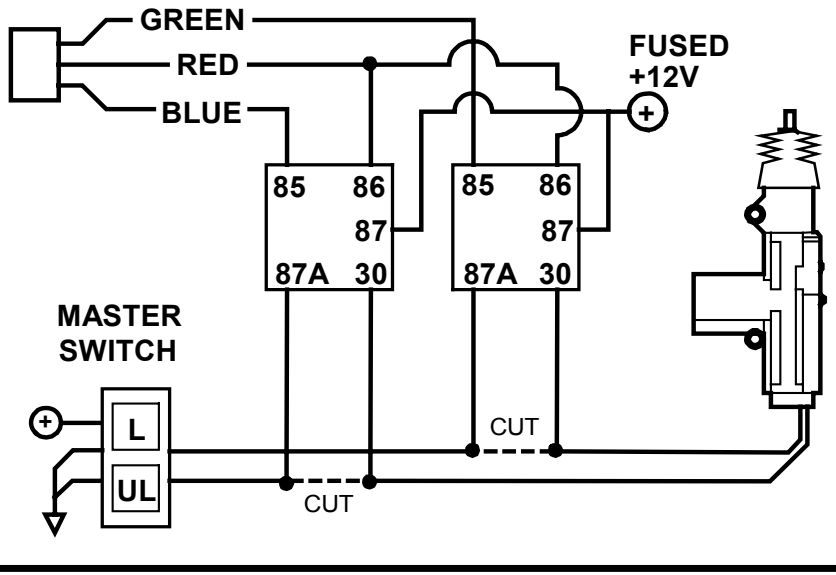
NEGATIVE TRIGGER DOORLOCK WIRING



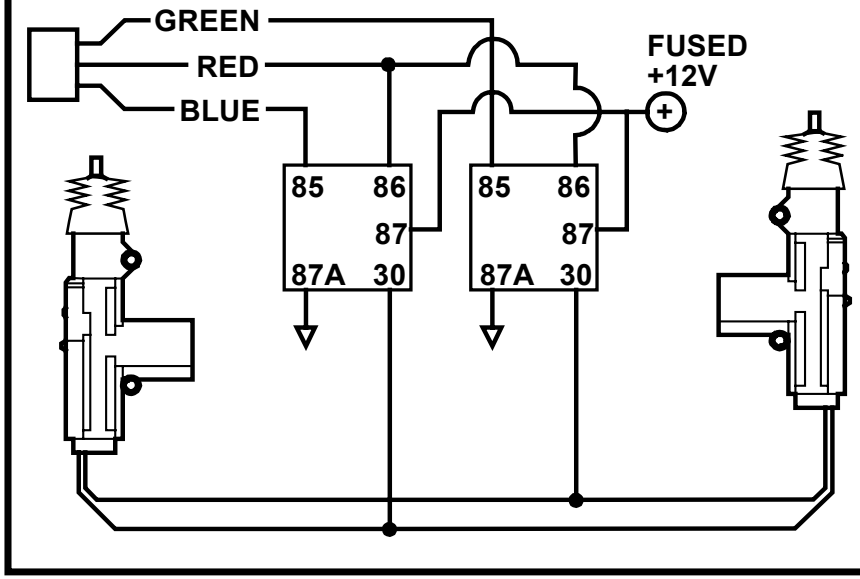
POSITIVE TRIGGER DOORLOCK WIRING



REVERSE POLARITY DOOR LOCK WIRING



AFTERMARKET MOTOR/DOOR LOCK WIRING



"SMART TACHLESS" MODE

Your CoolStart system includes a unique voltage monitor called "Smart Tachless" mode. This mode allows this unit to efficiently start an engine without the use of a tach signal wire. These modules actively monitor the voltage level of the vehicle to control the starter motor each time a remote start is requested.

IMPORTANT NOTES:

(1) SETUP may be required for the RS900/901/999FM "Smart Tachless" Mode. If your vehicle has not been at rest for a period of time (Hot engine), then you must drain the surface charge from the battery. Unplug main power harness from unit, turn HEADLIGHTS ON for 4 minutes to drain off excess surface charge on vehicle's battery then reconnect.

(2) On the rare occasion that "Smart Tachless" mode does not operate satisfactorily, change the voltage reference level as described below, or use a different mode such as "Tach Reference" mode, or "Timed Crank" mode.

"SMART TACHLESS" ADJUSTMENT:

In the event "Smart Tachless" over-cranks or under-cranks your starter, the settings can be changed. The purpose of adjusting the "Smart Tachless" Mode is to raise or lower the voltage reference threshold from the 90% default point. Raising or lowering this 90% point should increase or decrease your cranking time respectively. The adjustment range is from 80% to 100% in one percent increments. The Default is 90%. Follow steps below to adjust the reference level.

1. Open hood (or ground Gray wire if no hood pin is installed)
2. Turn the key to the ON position
3. Press program button 5 times, after a few seconds the unit will flash the lights 5 times.
4. Carefully press the program button 19 times to get to option level 19. You must get a light flash after each press. If the lights didn't flash, then the unit did not register your button press. Only count the light flash.
5. Press the Lock Button #1 on the remote to decrease by 1% (lights will flash 1X for each press); Press the Unlock Button #2 to increase by 1% (lights will flash 2X for each press); Press the Trunk Button #3 to reset to 90% (lights will flash 3X). The unit will stop providing light flashes when you reach the bottom (80%) or the top (100%) of the adjustment range. If you lost track, then just press Button #3 to reset back to 90% and begin raising or lower again.
6. Turn Ignition OFF, Close hood (or un-ground the Gray wire) and check operation.

NOTE: This Smart Tachless adjustment feature is not available on the RS901 Model that has no remote transmitters or antenna. If you must use this feature on a 901, then a remote and antenna module from an RS900 must be used to set the desired level, then removed when finished.

TACH REFERENCE, TACH FINDER, TACH PROGAMMING

Tach Reference Mode provides reliable remote starting performance though engine speed (RPM) sensing. When using Tach Reference Mode, the Red/White wire is used for Tach signal [Engine RPM] input. Most modern engines include various points where the Engine Speed [Tach] or A/C signal may be obtained. Tach Signal examples: Negative (-) side of ignition coil, at the Distributor or Ignition Control Module, Coil Pack, Engine Computer, or Crankshaft Sensor. Sometimes Fuel injectors, and Alternator stator pins can be used. *These Tach Signal locations mentioned are provided as a guide, your vehicle may differ. Some locations will NOT be a good location for Tach source due to RF noise or Computer Data.*

TACH FINDER MODE:

This Tach Finder mode will assist you in locating a Tach source for your installation. The Tach finder mode does not determine the "Quality" of the signal. Follow the Tach Finder steps below to locate and /or verify a tach signal. When following the steps, the unit will begin to flash the parking lights if you have the Red/White wire connected to a valid tach source. If lights do not flash, then try another wire until you locate a tach signal that will cause the Parking lights to flash.

NOTE: On some vehicles equipped with daytime running lights, it may be difficult to see any flashing parking lights. In this case your only notification will be the slight "ticking" sound coming out of the module from the on-board flashing light relay.

TACH FINDER:

1. Open hood (or ground Gray hood pin wire if no hood pin is installed)
2. Start Engine with the key.
3. Press the Program button for 2 seconds
4. Lights will begin flashing if the Red/White wire is connected to a valid tach source. If not try a different wire until one is located.
5. Once Tach is located then turn off engine and close hood to abort (Remove Gray wire from ground).
6. See Tach Reference programming below.

\

TACH PROGRAMMING:

1. Open hood (or ground Gray hood pin wire if no hood pin is installed.)
2. Red/White wire should be connected to a valid Tach source.
3. Start engine with key.
4. Press program button 5 times, then wait for 5 light flashes.
5. Push program button again once. (You must get one light flash after button is pressed.) This unit is now at option #1- Tach Learning.
6. Press the #2 Unlock Button on remote transmitter. The unit will read the Tach source and flash the lights twice for program confirmation. (On RS901 models without remote transmitters, press the brake pedal in this step.)
7. If lights do not flash twice for confirmation, then try another tach source or try the tach finder to locate another wire.

TIMED CRANK MODE

This feature provides an easy method of starting the vehicle without locating an exact tach wire. The system uses an exact timed cranking output combined with the use of the Red/White tach wire as an engine ON/OFF monitor. The Red/White Tach wire must still be used in this mode of operation. THIS FEATURE MUST BE PROGRAMMED BEFORE USE! THERE ARE 2 LEVELS of programming required: First, set the system for "Timed Crank" operation, and secondly you may need to adjust the amount of cranking time. There are 4 different crank times available for use. SEE OPTION PROGRAMMING CHART ON PAGE 16 FOR SETTINGS.

HOW TO USE THIS FEATURE:

1. Go to the "Programmable Options" section, and turn ON Option #15 "Timed Crank". (It is normally on Tach Monitor)
2. With "Timed Crank" turned ON, you will STILL have to connect the Red/White Tach wire to a tach source on the engine. The Red/White Tach wire becomes a simple "Engine Monitor". Although the unit will not be using the Red/White wire to start the motor, it will be using this wire to determine whether the motor is running or not. This is a mandatory connection. A "crude" or "less exact" tach source can be used only when in "Time Crank" mode.
3. Using the vehicle key, start the engine a few times to get a "feel" of how long the cranking time is. Once the "Timed Crank" mode is turned on, the default cranking time is set to a default of 0.50 seconds. We recommend beginning with this setting. Try a remote start and see if the cranking is appropriate for your vehicle
4. If 0.50 seconds is not an appropriate starter cranking time, then go to Programming Option #16 and change the crank time setting to a longer value. The values are as follows: 0.5, 0.75, 1.0, and 1.5 seconds.

WARNING: This method of starting the vehicle is not as reliable as using regular "Tach" mode. This method should be used only in the event that a tach wire cannot be located using the normal tach programming and tach finder. When using this method, there may be certain operating anomalies requiring seasonal adjustments. These are, but not limited to:

- **Starter may under-crank in extreme cold weather. Vehicle may not start on 1st attempt and may require a 2nd or 3rd try.**
- **In warm weather when your vehicle may start very quickly, "Timed Crank" mode may tend to over-crank the starter.**
- **The only way to correct the above issues is to go to Option #16 and adjust the cranking time.**
- **When in "Timed Crank" mode, the cranking time can only be adjusted manually through option #16. When the RS900/999/901 system is in Smart Tachless or Regular Tach Learning mode, cranking time is adjusted automatically.**

DIESEL GLOW PLUG DELAY

This feature provides a solution for diesel vehicles without having to connect to the Glow Plug-“Wait to Start Circuit”. This may be needed for various reasons. If your vehicle does not have a viable “Wait to Start Circuit”, or you cannot locate and identify the circuit, then change your system to “Diesel Glow Plug Delay” mode. You can choose from a selection of “pre-cranking” delay times. Once this mode is activated, the RS-900/901/999 system will NO LONGER monitor the PINK glow plug input wire and will use a delay setting chosen by the installer in the option chart.

NOTES: This feature is OFF by default and must be programmed before use! Once this feature is turned ON, the Pink Glow plug input wire is not used. The Remote start unit will always wait the programmed time before cranking EVEN IF the glow plug warms up first. There are 3 different Delay times available for use: 10, 20, or 30 seconds. SEE OPTION PROGRAMMING CHART on Page 17.

HOW TO USE THIS FEATURE:

1. See the “Option Programming” section on Pages 15-19 and change Option #17 from "Monitor Glow Plug Light" to one of the delayed time values. (Default setting is to always monitor the PINK Glow Plug input wire.)
2. Once this option has changed the RS-900/901/999 system will wait for the selected time before cranking.

OPTION PROGRAMMING [*IMPROVED*]

IMPROVED: Now you can program multiple options in one session if you start with the lowest option and continue on to higher options [if needed] without repeating the steps #1-3. For example, you can change Option #2 to “ON” by pressing the lock button, then you can continue pressing the program button to get to a high number option and change it as well without having to repeat Steps 1-5. You can only go from low to higher options numbers in one session.

To Engage Option Programming:

1. Open hood (ground the Gray wire if no hood pin switch is installed)
2. Turn Key to the ON position
3. Press program / valet button 5 times. After a few seconds the unit will flash the lights 5 times.
4. Push the valet/program button [again] the number of times that corresponds to the option number desired (1-20X). You must get a light flash after each button press. See chart on next page for option list.
5. A) ***For RS900/999FM:*** When you reach the desired programming level, Press button #1(Lock) or #2 (Unlock) to change the option. (Options 16, 17, and 18 use all 4 transmitter buttons.)
5. B) ***For RS901*** (No remotes) Tap the brake pedal to toggle through the option values: Tap the brake once (lights flash 1X; Tap the brake pedal again (Lights flash 2X) tap 3 or 4 times for options that have 3 or 4 values.
6. Turn Ignition OFF, Close hood and check for changed features.

OPTION PROGRAMMING CHART

*** = Default**

Option #	Option Description	Option Values	Button #1 LOCK	Button #2 UNLOCK
1.	Engine Monitoring	Tach (Engine RPM) or Tachless	Tach	Tachless*
2.	Autolock with Ignition	ON or OFF.	ON	*OFF
3.	Door Lock Pulse Time	0.75 Sec. (Standard) OR 3.0 Sec. (European Vacuum)	3 Sec.	*0.75 Sec.
4.	Double Unlock Pulse	Single or Double Unlock Pulse	Double	*Single
5.	OEM Interface (RS901 MODEL ONLY)	Remote Start w/Single Pulse or 3 Pulses on Green input wire	3 pulse	*1 Pulse
6.	Passive Starter Disable	ON or OFF	ON	*OFF
7.	Horn Chirps on remote start	ON or OFF	ON	*OFF
8.	Lock During and After Remote Start Abort	ON or OFF	OFF	*ON
9.	Tan Wire Output function	Trunk or Dome Light Output	Dome	*Trunk
10.	“Wake up” Pulse on Unlock (1-sec +12V to IGN)	ON or OFF	ON	*OFF
11.	N/A - Not used	N/A – Not used		
12.	Yellow/Black Wire (-)	(-) IGN output or (-) Anti-Grind	Anti-Grind	*IGN output
13.	Horn Chirp Confirmation with 2 presses of Lock/Unlock	ON or OFF	OFF	*ON
14.	Unlock/Disarm with Trunk pop activation	Trunk Pop & Unlock or Trunk Pop Only	Trunk Pop & Unlock	*Trunk Pop Only
15.	Timed Crank Mode or Tach Monitor	Timed Crank: Pre set crank time Tach Monitor: Use Tach Pulses	Timed Crank	*Tach Monitor
16.	Starter Cranking Time (Only when option #15 is set for “Timed Crank”)	Button #1 = 0.5 Sec. Button #2 = 0.75 Sec. Button #3 = 1.0 Sec. Button #4 = 1.5 Sec.	0.75 Sec	*0.5 Sec

PROGRAMMABLE OPTIONS CHART CONTINUED

17	Diesel Glow Plug Delay	Button #1 = 10 Sec. Button #2 = Monitor Glow plug Button #3 = 20 Sec. Button #4 = 30 Sec.	10 Sec.	* Monitor Glow Plug circuit
18.	Remote Start Engine Run Time	Button #1 = 12 Min. Button #2 = 24 Min. Button #3 = 36 Min. Button #4 = 48 Min.	12 Min.	*24 Min.
19.	Smart Tachless Voltage Adjust 80-100% (Only when Option #1 is set to “Tachless”)	Button #1 = Decrease by 1% increment Button #2 = Increase by 1% increment Button #3 = Reset to 90% (Default)	-1%	+1%
20.	Option reset	Button #2		Reset Default

OPTION DESCRIPTIONS:

1. Engine Monitoring:
This option sets how the unit monitors your engine. You can program either for Tach mode in which the unit uses a Tach signal (RPM) or for Tachless mode that monitors voltage level. See pages 12-14 for more information and additional steps for actual Tach learning and Tach finder modes.

2. Auto Lock/Unlock with Ignition:
Controls whether the doors will automatically lock when the ignition is turned on and will unlock when turned off.

3. Door Lock Pulse Time:
Controls the amount of time for lock/unlock pulse. The standard setting is 0.75 for most vehicles. A 3 sec. setting is required for 1980’s/90’s European Vacuum or Pneumatic door lock systems.

4.Double Unlock Pulse:
The unit will send 2 unlock pulses when the #2 Unlock button is pressed. This feature may be required for interfacing this alarm with an existing Factory Keyless Entry or Alarm system in a vehicle. These systems are found on some Nissan, VW, Toyota, and Lexus vehicles.

PROGRAMMABLE OPTIONS

5. OEM Interface (RS901 Add-on Model):
This option controls this input selection for the Green Negative Start Trigger Wire. When using an Aftermarket Host Alarm or Keyless Entry System: Leave the setting as "1 pulse" and connect the Green wire to the (-) Auxiliary output wire of the Alarm or Keyless Entry System. For Factory Keyless entry systems (without a (-) Negative auxiliary output), change the option to "3 Pulse" and tap the green wire into a Negative signal wire on the vehicle such as a Negative door lock wire. Pressing the Factory remote lock button 3 times will produce 3 short negative signals to trigger a remote start.

6. Passive Starter Disable:
Note: Yellow/Black Negative Output must be programmed as an "Anti-Grind" for this feature. See option #12.
This option controls the unit's Negative Anti-Grind output allowing it to come on automatically 1 min after the ignition has been turned off. Note if you set this system up for a Passive Starter Disable/Anti-Grind, you must use the remote control UNLOCK button when returning to the vehicle to deactivate it or vehicle will not start with key.

7. Horn Chirps on Remote Start:
This option allows the unit to provide 3 short chirps when for audible confirmation of a remote start. The horn output wire must be connected for this feature.

8. Lock During/After Remote Start:
This option controls whether the unit will automatically lock during and after a remote Start abort or time-out.

9. Brown Output Wire Function: Trunk Pop or Dome Light Output
This option controls how the Brown output wire of the unit functions, either for Trunk pop or for Dome light illumination.

10. +12V "Wake up" Pulse:
This option allows the unit to provide a 1-second pulse on the Pink main ignition output when unlocking. The Ignition pulse serves to "Wake up" vehicle control modules or body computers that "time out" or go into power saving mode. This is required on many late model Ford vehicles with a "Slam" lock system in order to actually unlock the vehicle after it has been shut down for a short period of time.

11. No Option, Not used

12. Yellow/Black Wire Function: (-) Negative IGN or ANTI-GRIND / Starter Kill Output
This option controls the units Negative multi-function output. Default: Negative IGN output that turns ON and stays on for the duration of the remote start. Use this wire to turn on Anti-theft bypass adapters for GM or Transponder systems. When changed to an Anti-Grind, this output activates when the Lock button on the remote is pressed and activates during a remote start. Anti-Grind is designed for use with an optional Starter disable relay (Not included).

PROGRAMMABLE OPTIONS

13. Horn Chirp Confirmation with Double Lock/Unlock Press (When Optional Horn Output installed):
This option allows the system to chirp the vehicle horn for Lock/Unlock confirmation when the Lock or Unlock Button on the remote is pressed a 2nd time within 3 seconds. The horn output must be connected to use this feature.

14. Unlock With Trunk Pop or Trunk Pop Only:
This option controls whether the system will provide an Unlock/Disarm pulse when the Trunk release is activated from the remote control. This may be required to prevent unnecessary triggering of a factory alarm on some vehicles.

15. Timed Crank Mode or Tach Monitor:
This option controls whether the system uses a tach wire to control the starter or uses a pre-set starter cranking time.

16. Pre-Set Starter Cranking Time: (Requires Option #15 to be set to "Timed Crank")
This option controls the starter output cranking time. Choices are 0.5, 0.75, 1, or 1.5 seconds.

17. Diesel Glow Plug Delay:
This option controls the system's Diesel vehicle interface. Using this option you can control whether the unit monitors the vehicle's glow plug circuit using the Pink input wire (Default), or you may select a specific delay time before cranking. This option is helpful if you are unable to locate a glow plug signal. Just select a delay time and do not connect the Pink Glow Plug wire. Selections: 10, 20, 30 seconds, or Monitor Pink Wire (Default).

18. Remote Start Run Time:
This option controls the engine run time for remote start. Use the buttons on the remote control set a choice of 12, 24, 36, or 48 minutes. The default setting is 24 minutes.

19. Smart Tachless Voltage Adjustment:
This option controls the voltage reference point when using smart Tachless mode. Pressing the Lock or Unlock buttons on the remote raises or lowers the reference level in 1% increments from 80%-%100. Button #3 resets the unit to the factory default reference point of 90%. The default 90% setting works for most vehicles. See page 12 for additional Smart Tachless mode information.

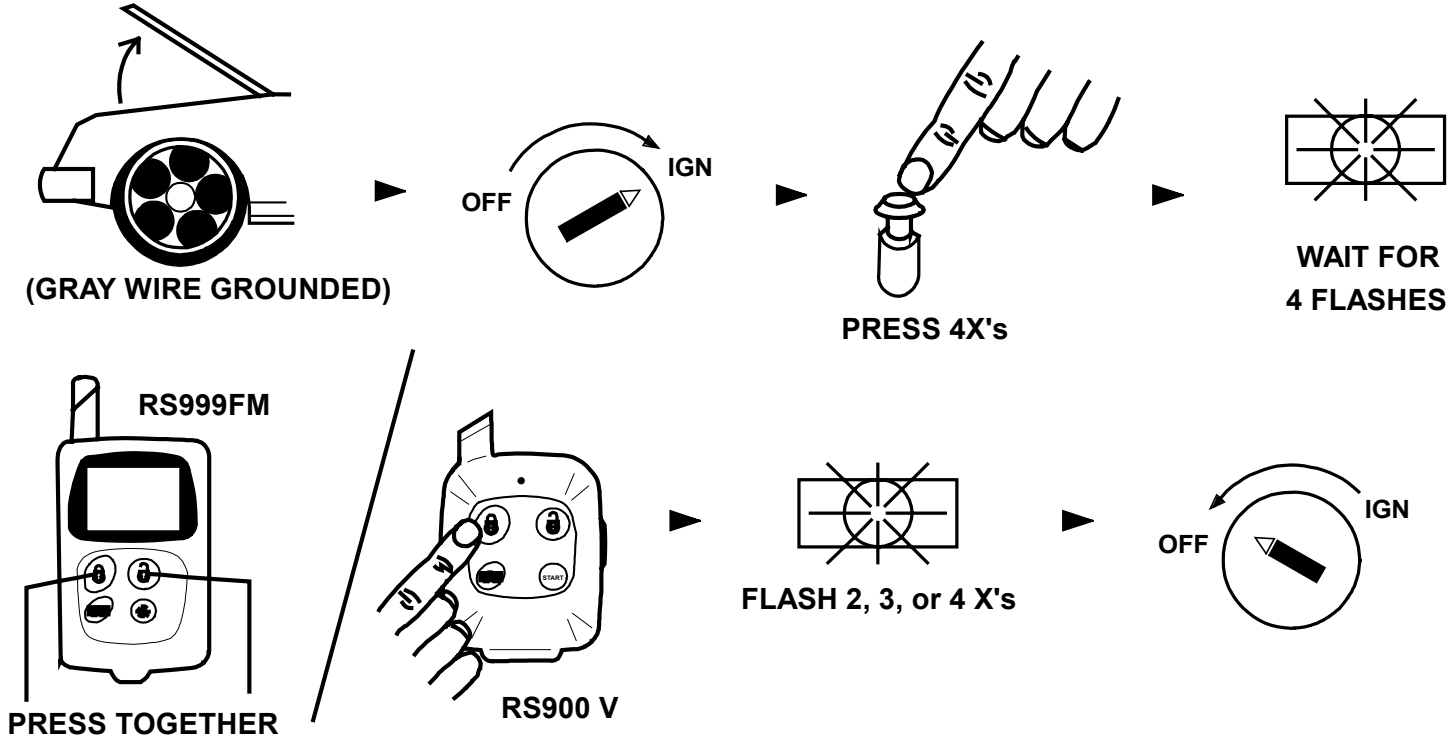
20. Option Reset:
This option allows you to restore all programmable options to factory default values. Go to the 20th option and press the Unlock Button #2 on the remote. The unit will flash the lights 2 time and all values will be reset to factory original settings. Default values are marked with asterisks in the chart on pages 16-17.

900 VI TRANSMITTER / 999FM TRANSCEIVER CODE LEARNING

Transmitter/Transceiver Code Learning: (Excludes RS901 model without remotes)

Note: Remote Transmitters/Transceivers come pre-programmed from the Factory. When re-learning remotes or adding remotes, ALL your system's remote codes must be learned at time of programming!! These systems allow storage of up to 4 different remote codes in memory. The RS-999FM TW1 system includes both a 1-way remote transmitter and an LCD remote. The one way transmitter for the TW1 system is a special model called a CS-397.

1. Open hood (ground the Gray hood pin wire if no hood pin is installed.)
2. Turn key to the ON position. (Starting the vehicle is not necessary.)
3. Press Program/Valet button 4 times. After a few seconds, the unit will flash the parking lights exactly 4 times.
4. RS900: Press Button #1 (Lock) of the transmitter to be learned. RS999FM: Both the *Lock & Unlock* button must be pressed. You should get 2 light flashes indicating the code-learn. Now the unit is waiting for a 2nd code, so repeat this step as needed with up to 3 additional remotes. The unit will flash the lights in succession after each code learned for up to 4 codes. (2 flashes for the 2nd code, 3 flashes for the 3rd code etc.) If all 4 codes are learned, the unit will automatically exit code learning mode, otherwise turn key OFF and close the hood. (See Diagram Below)



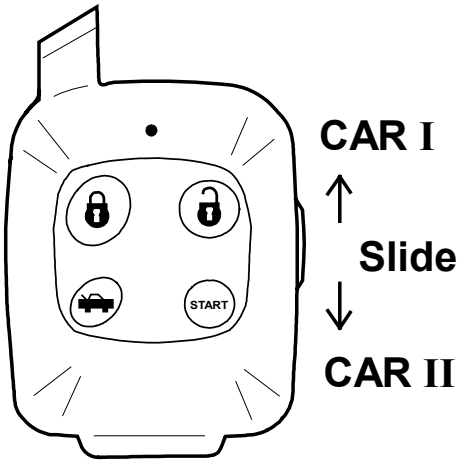
2-VEHICLE OPERATION

Both the RS-900 VI and RS-999FM systems can be used for 2-car operation. A single RS900VI remote can control two independent vehicles with RS900 VI systems installed. A single RS-999FM transceiver remote can operate two independent cars with RS-999FM systems installed.

NOTE: These systems ARE NOT interchangeable. An RS-900 system CANNOT operate an RS-999FM and vice versa! The RS-999FM TW1 system includes both a 1-way remote transmitter and an LCD remote. The one way transmitter for the TW1 system is a special model called a CS-397.

See diagram below on how to switch your remote to car 2 operation. Once you switched your remote to Car 2, then follow the transmitter programming steps on the second vehicle and learn YOUR remote, along with Car #2's existing remotes.

CAR I / CAR II OPERATION

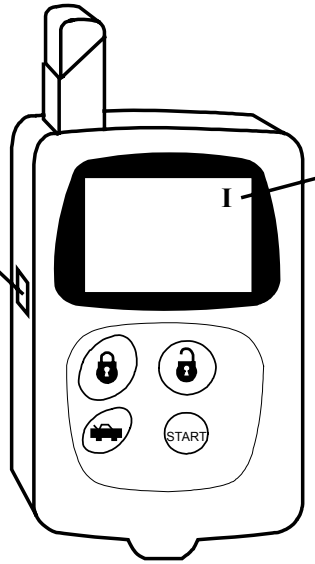


CAR I

Slide

CAR II

RS 900 V



PRESS and hold 5 SEC.

CAR I or II Icon

RS 999 FM

TROUBLESHOOTING: "BEFORE YOU CALL" SECTION

UNIT WILL NOT ATTEMPT A START (KEYLESS ENTRY FUNCTIONS NORMALLY):

The unit is in Valet mode. Turn IGN ON, press and hold valet/programming button for about 6 seconds then turn key off. Unit is now out of valet mode and should perform a remote start. If optional LED is installed, then it will be on solid when in Valet.

UNIT FLASHES LIGHTS ONCE AND WILL NOT ATTEMPT A START:

The unit senses a fault at the Brake (Purple wire is active) or the Hood is OPEN (Gray wire grounded). This is a safety feature of the unit. Check installation for faults and make sure hood is closed and latched and brake wire is not active.

UNIT CRANKS VEHICLE BUT ENGINE NEVER STARTS: (2 parts)

1. In some vehicles, there may be a Factory anti-theft system that will not allow the engine to run without the key in the ignition. These systems may include Factory Security Modules, GM Passkey®/Passlock®, and RF Transponder systems (Ford P.A.T.S.®). Many late 1990's and later vehicles include some type of Anti-Theft system which may require a bypass module.
2. The vehicle may have more than one Ignition/or Accessory circuit that requires power for the vehicle to start. This is common on some GM/Toyota vehicles.

VEHICLE STARTS BUT CHECK ENGINE LIGHT COMES ON OR ENGINE RUNS BADLY: (2 parts)

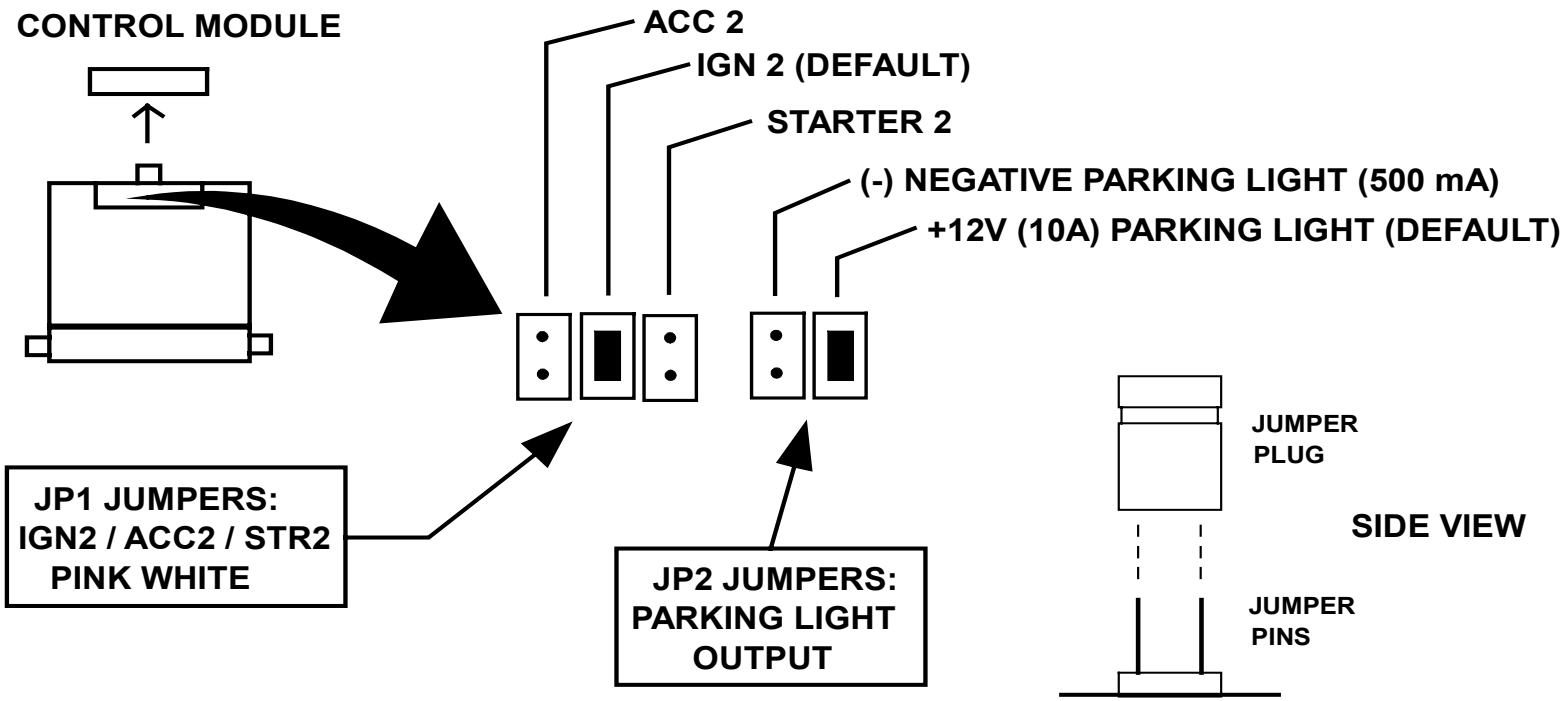
1. Many 1995-UP General Motors cars/trucks require a secondary ignition circuit for the Transmission computer and other on board systems. If the vehicle is started without this wire energized, there may be a "Check Engine" or "Service Engine" light on the dash. This may cause damage if the vehicle is driven in this condition. Be sure to check for and additional WHITE (or sometimes GREEN) Ignition wire on GM cars and trucks. Connect the Pink/White IGN#2 wire to this circuit in the vehicle.
2. Some Vehicles (Commonly Nissan) require 2 Start (Cranking) circuits for the vehicle to run properly. If this is the case, then use the PINK/WHITE output of this system to power the Starter #2 circuit of the vehicle. See Jumper pin diagram for configuration. Note that the secondary starter wire may be a smaller gauge wire than the primary starter wire.

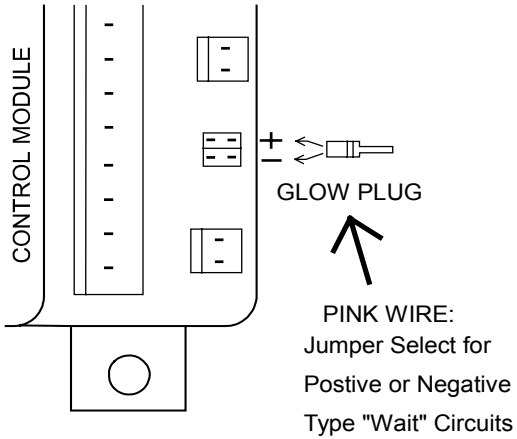
NO RESPONSE FROM REMOTE TRANSMITTER (RS900/999FM):

1. Check antenna connection: Antenna must be plugged in (3 pin black plug on side of module).
2. Press remote control Lock or Unlock button several times in succession.
3. Verify if remotes are programmed to module, otherwise perform transmitter learning steps.

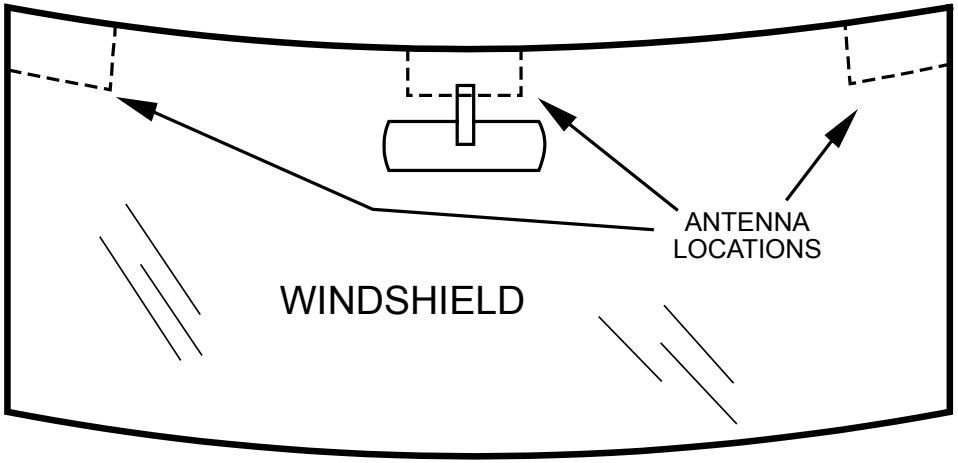
JUMPER PIN DIAGRAMS

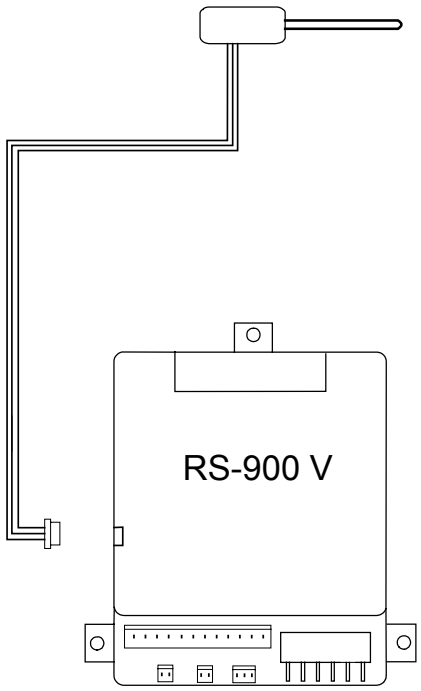
Jumper pins are used to change/configure the operation of the on board multi-function output PINK/WHITE wire, the Parking Light WHITE wire and the PINK glow plug input wire. See the diagrams below for Jumper Pin configurations.

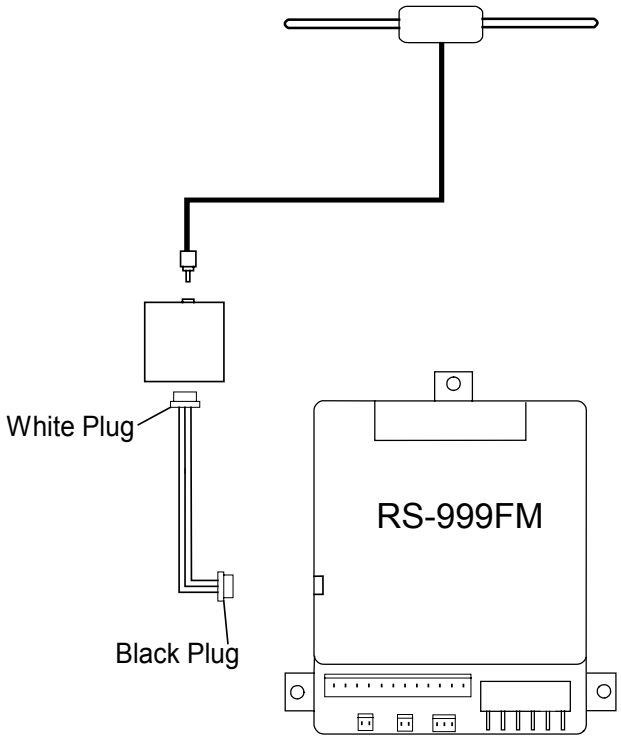


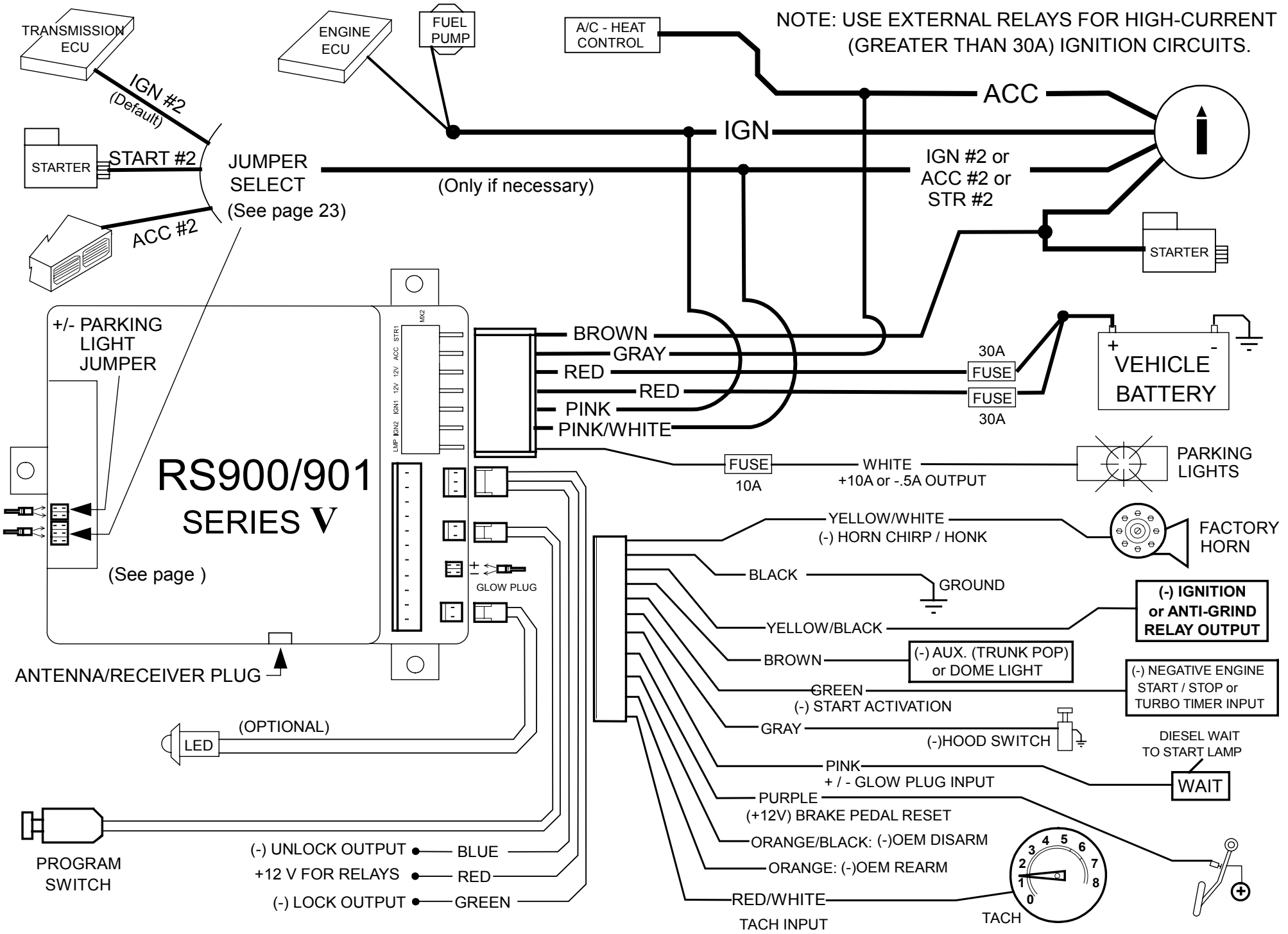


ANTENNA DIAGRAM








NOTE: USE EXTERNAL RELAYS FOR HIGH-CURRENT (GREATER THAN 30A) IGNITION CIRCUITS.
TRANSMISSION ECU
IGN #2 (Default)
STARTER
START #2
ACC #2
JUMPER SELECT
(See page 23)
ENGINE ECU
FUEL PUMP
A/C - HEAT CONTROL
ACC
IGN
IGN #2 or ACC #2 or STR #2
(Only if necessary)
STARTER
+/- PARKING LIGHT JUMPER
RS900/901
SERIES V
(See page)
ANTENNA/RECEIVER PLUG
BROWN
GRAY
RED
RED
PINK
PINK/WHITE
30A FUSE
30A FUSE
+ VEHICLE BATTERY -
FUSE 10A
WHITE
+10A or -.5A OUTPUT
PARKING LIGHTS
YELLOW/WHITE
(-) HORN CHIRP / HONK
FACTORY HORN
BLACK
GROUND
YELLOW/BLACK
(-) IGNITION or ANTI-GRIND RELAY OUTPUT
BROWN
(-) AUX. (TRUNK POP) or DOME LIGHT
GREEN
(-) START ACTIVATION
(-) NEGATIVE ENGINE START / STOP or TURBO TIMER INPUT
GRAY
(-)HOOD SWITCH
DIESEL WAIT TO START LAMP
WAIT
PINK
+ / - GLOW PLUG INPUT
PURPLE
(+12V) BRAKE PEDAL RESET
ORANGE/BLACK: (-)OEM DISARM
ORANGE: (-)OEM REARM
RED/WHITE
TACH INPUT
TACH
GLOW PLUG
LED
(OPTIONAL)
PROGRAM SWITCH
(-) UNLOCK OUTPUT
BLUE
+12 V FOR RELAYS
RED
(-) LOCK OUTPUT
GREEN

CRIMESTOPPER INSTALLATION ACCESSORIES

Crimestopper Security Products Inc. manufactures installation accessories, Databus interface modules and transponder override modules for remote start installation.

Relays & Modules:

XX-402A/SRS: 30A Relay/Single Relay Socket **CS-6500DLI:** Door Lock Pulse Inverter **CS-6600DLM:** 2-Relay Door Lock Module

Transponder Override Module:

RS-TATA: Universal Transponder Bypass Module (Requires use of a spare vehicle key)

Transponder Override Modules (No Spare Key Required):

PKG4: GM PassKey® III RF Transponder Override Module

Buick: LeSabre 2000-03, Park Ave 1997-03, Rendezvous 2002-03
Cadillac: Deville 2000-03, Seville 1998-03
Pontiac: Aztec 2001-02, Bonneville 2001-02, Montana/Transport 1999-02
Chevrolet: Venture 1999-02
Oldsmobile: Aurora 2001-02, Silhouette 1999-02

PKF: Ford P.A.T.S.® Transponder Override Module**

Ford:	Contour 1999-00	Crown Victoria 1999-01	Excursion 2000-01	Expedition 1999-01
	Explorer 1999-01	F-150 1999-01	Mustang 1999-01	Ranger 1999-01
	Taurus 1999	Windstar 1999-01		
Lincoln:	Continental 1999-01	Navigator 1999-01	Town Car 1999-01	
Mercury:	Cougar 1999-01	Grand Marquis 1999-01	Mountaineer 1999-01	Mystique 1999-00
	Sable 1999			
Mazda:	B3000/4000 Pickup 1999-01			

[**Not compatible with ’02-UP “Securilok” type systems]

PKU-CH: Chrysler / Dodge / Plymouth Transponder Override Module
All Vehicles with Gray “Sentry Key” Factory Transponder

PKH2: Honda / Acura OEM Transponder Override Module
Honda: Accord 1998-02, Pilot 2003 *Acura:* CL/TL 1998-02, Integra 2000-01, Odyssey 1999-02, MDX 2001-02

PKH3: Honda / Acura OEM Transponder Override Module
Honda: Accord 2003, Civic 2001-03 CRV 2002-03 Element 2003 *Acura:* 1.7 EL 2001-03, MDX 2003, RSX 2002-03

PKT: Toyota / Lexus OEM Transponder Override Module
Most Toyota / Lexus Vehicles with Factory Transponder

CRIMESTOPPER INSTALLATION ACCESSORIES

Databus Door Lock Interface Modules (Allows easy interface into Factory Databus type door lock systems):

CHDL-1B: Chrysler Door Lock Interface Module
- Lock/Unlock, Factory Alarm Arm/Disarm, Parking Lights, Starter Enable, & Panic
- Power Sliding Door/Hatch Input controls, & Door Trigger Output for Aftermarket Alarm

Chrysler: Town & Country / Voyager 2002 *Dodge:* Caravan 2002

CHDL2: Chrysler Door Lock Interface Module
Chrysler: 300M 1999-02, Concorde 1999-02, LHS 1999-02, Sebring Sedan 2002 *Dodge:* Intrepid 1999-02, Stratus Sedan 2002

CHDL3: Chrysler Door Lock Interface Module
Chrysler: Neon 2002-03, PT Cruiser 2002-03, *Dodge:* Dakota 2002-03, Durango 2002-03, Ram 2002-03

GMDL1 General Motors Door Lock Interface Module:
- Lock/Unlock, Factory Alarm Arm/Disarm, & Panic
- One-wire connection at diagnostic connector under driver's side dash

Chevrolet: Trailblazer 2002-03 *GMC:* Envoy 2002-03 *Oldsmobile:* Bravada 2002-03

GMDL2 General Motors Door Lock Interface Module:
Chevrolet: Malibu 2002, Monte Carlo 2003 Impala LS 2003 *Buick:* LeSabre 2000-03
Pontiac: Bonneville 2000-02, Grand Am: 1999-02 *Cadillac:* Deville 1998-00, CTS 2003, STS 1999-00
Oldsmobile: Alero: 2000-02, Aurora 2002-03

GMDL3 General Motors Door Lock Interface Module:
Buick: Park Avenue/Ultra 1997-03 *Cadillac:* Seville STS/SLS 2001-02

GMDL4: General Motors Door Lock Interface Module
GM/GMC: 2003 Avalanche, Escalade/EXT, Full-Size Pickups, Sierra, Suburban, Tahoe, Yukon/XL, Hummer H2

HODL: Honda Factory Door Lock Interface Module
- Lock / Unlock, Arm/Disarm, Trunk Pop

Honda: Accord 1998-02, Civic 2001-03, CRV 2001-03, Element 2003, Pilot 2003
Acura: 1.7 EL 2001-03, TL 2000-03

JDL: Jeep Factory Door Lock Interface Module
Jeep: Grand Cherokee Limited/Laredo 1999-04

CRIMESTOPPER INSTALLATION ACCESSORIES

ALL-IN-ONE Transponder Override Module & Door Lock Interface Modules:

JDL-PK: Jeep Transponder & Factory Door Lock Interface Module

- Sentry Key Transponder Override
- Lock/Unlock, Factory Alarm Arm/Disarm, Dome Illumination, Horn Chirp
- One-wire connection at diagnostic connector under driver's side dash

Jeep: Grand Cherokee Limited/Laredo 1999-04

CHDL-PK-1B: Chrysler Transponder & Factory Door Lock Interface Module

- Sentry Key Transponder Bypass
- Lock/Unlock, Factory Alarm Arm/Disarm, Parking Lights, Starter Enable, & Panic
- Power Sliding Door/Hatch Open & Close, & Door Trigger Output for Aftermarket Alarm

Chrysler: Town & Country/Voyager 2002 *Dodge:* Caravan 2002

CHDL-2-PK: Chrysler Transponder & Factory Door Lock Interface Module

- Sentry Key Transponder Bypass
- Lock/Unlock, Factory Alarm Arm/Disarm, Trunk, & Panic

Chrysler: 300M 2002, Concorde 2002, Sebring 2002 *Dodge:* Intrepid 2002, Stratus 2002

CHDL-3-PK: Chrysler Transponder & Factory Door Lock Interface Module

- Sentry Key Transponder Bypass
- Lock/Unlock, Factory Alarm Arm/Disarm, Trunk, & Panic

Chrysler: Neon 2002-03, PT Cruiser 2002-03, *Dodge:* Dakota 2002-03, Durango 2002-03, Ram 2002-03

CRIMESTOPPER

www.crimestopper.com
email@crimestopper.com
Phone (800) 998-6880
FAX (805) 581-9500

TechWeb
ONLINE TECHNICAL SUPPORT
www.crimestopper.com/techweb03.html

© 2003 Crimestopper Security Products